

REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Claims 15, 16, 20, 21, 26, and 27 have been amended for clarity. These amendments are considered to be non-narrowing, and no estoppel should be deemed to attach thereto. Support for the language of amended claim 15 is provided for example in the specification on page 24, third paragraph. (It should be noted that references herein to the specification and drawings are for illustrative purposes only and are not intended to limit the scope of the invention to the referenced embodiments.)

Claims 15-27 stand rejected, under 35 USC §103(a), as being unpatentable over Sarkkinen et al. (US 2005/0063347) in view of Chang et al. (US 2003/016698). The Applicants respectfully traverse these rejections based on the points set forth below.

Claim 15 defines a method of retransmission-protocol, reset synchronization for a radio network having a radio network controller (RNC) and a plurality of base stations in communication with mobile stations. The RNC communicates with a mobile terminal using a radio link control (RLC) procedure and a base station communicates with a mobile terminal using a medium access control (MAC) procedure. Multiple RLC procedures share a soft buffer, a reordering buffer in a mobile terminal, and a priority queue in a base station.

According to the method of claim 15, a reset procedure executed for an RLC procedure flushes MAC protocol data units (PDUs) associated with the reset RLC procedure from the shared soft buffer, reordering buffer, and priority queue. MAC PDUs associated with RLC procedures that are not reset are not flushed from the shared soft buffer, reordering buffer, and

priority queue. The claimed subject matter provides an advantage of supporting efficient utilization of radio resources, while avoiding operational malfunctions of a retransmission protocol and avoiding losses of data (see specification page 21, last paragraph).

It should be particularly noted that the Applicants' claimed subject matter includes the deletion of the selected MAC PDUs in a soft buffer and a reordering buffer in a mobile terminal and a priority queue in a base station.

It should be further noted that the Applicants' claimed invention recites that the MAC reset procedure, with partial priority queue flushing in the base station, is initiated while receiving a MAC PDU with predefined inbound identification and a reset identification (RID) field comprising a logical channel identification.

The Applicants submit that the individual or combined teachings of Sarkkinen and Chang fail to suggest the claimed subject matter of flushing MAC PDUs associated with a reset RLC procedure from a soft buffer, a reordering buffer in a mobile terminal, and a priority queue in a base station without flushing MAC PDUs not associated with a reset RLC procedure, and initiating a MAC reset procedure when receiving a MAC PDU with predefined inband identification and a reset identification (RID).

The Office Action proposes that Sarkkinen discloses, in Figs. 12 and 13, a user equipment MAC procedure having a first RLC procedure associated with a first buffer and a second RLC procedure associated with a second buffer (see Office Action section 4, lines 10-12). However, the Office Action acknowledges that Sarkkinen does not disclose a reset procedure in which:

- (1) MAC PDUs associated with an RLC procedure are flushed from a buffer and

(2) MAC PDUs associated with another RLC procedure are not flushed from this same buffer (see Office Action page 3, line 11, through page 4, line 3).

In an attempt to overcome this deficiency, the Office Action relies on a teaching in Chang of a reset procedure in which MAC PDUs associated with an RLC procedure are flushed from a buffer (see Office Action page 4, lines 10-12). Thus, the Office Action proposes that Chang discloses feature (1), above.

However, the Applicants note that Chang does not disclose flushing from a buffer MAC PDUs associated with one RLC procedure, while leaving in the buffer MAC PDUs associated with another RLC buffer. Chang lacks any teaching of a buffer used by more than one RLC procedure.

Moreover, the Applicants note that Sarkkinen merely discloses a first RLC procedure associated with a first buffer and a second RLC procedure associated with a second buffer. Thus, the RLC procedures in Sarkkinen are associated with different buffers. Sarkkinen does not disclose a buffer used by more than one RLC procedure. In contrast, the Applicants' claim 15 recites a buffer used by more than one RLC procedure.

The Office Action page 5, lines 1-3 states that Sarkkinen and Chang do not disclose the combined features of MAC PDUs associated with one procedure are flushed while MAC PDUs associated with another RLC procedure are not flushed. The Office Action at page 5, lines 1-3 fails to take into account the feature of the present claims that parts of a buffer are used by more than one RLC procedure, while MAC PDUs associated with one RLC procedure are flushed from the buffer and MAC PDUs associated with another RLC procedure are not flushed from this same buffer.

Thus, the Office Action argues that it would have been obvious to modify the combined teachings of Sarkkinen (two buffers associated with two different RLC procedures) and Chang (flushing a single buffer associated with an RLC procedure) to include features of instant claim 15 directed to plural RLC procedures that enable communication between the RNC and the mobile terminal and that are associated with a single buffer, and flushing of the MAC PDUs associated with one RLC without flushing the MAC PDUs associated with the other RLC, from the single buffer. With respect to the rationale or motivation for the modification, it is submitted that the Office Action provides insufficient reasons as to why a skilled artisan would have been motivated to modify Sarkkinen's system which uses two buffers associated with two different RLC procedures, in view of the single buffer RLC reset procedure taught by Chang, as discussed below.

The Office Action proposes that a skilled artisan would have been led by Chang's teachings to provide a MAC protocol behavior in which the MAC PDUs associated with a reset RLC procedure are deleted, while maintaining all MAC PDUs of other, not-reset RLC procedures. More specifically, the Office Action proposes that, when modifying the system of Sarkkinen's Fig. 12 for user equipment UE_z according to the RLC reset teaching of Chang, only the PDUs associated with either one of the procedures is reset; that is, the MAC PDUs associated with buffer v are deleted while the MAC PDUs in buffer u are maintained. However, the Office Action does not identify any specific text passage in Chang that would support this proposition.

Chang does not disclose deleting only the MAC PDUs belonging to an RLC procedure that is reset. Chang discloses the use of a single RLC buffer for transmitting data; thus, Chang

cannot teach a MAC reset operation that distinguishes between several RLC procedures, in which only the MAC PDUs belonging to a reset RLC buffer are deleted.

Moreover, the Office Action seems to overlook the Applicants' claimed subject matter wherein the deletion of the selected MAC PDUs is also applied to a soft buffer and a reordering buffer in a mobile terminal and a priority queue in a base station.

Chang does not mention the different buffers/queues of the MAC protocol in the sender and the receiver side, but, instead, discloses that all data blocks stored in a sender MAC-hs and the corresponding data blocks and the receiver MAC-hs are discarded (see Chang paragraph [0079]). Thus, Chang does not identify flushing of individual buffers of the MAC protocol on the sender and receiver sides.

Chang discloses deleting all data blocks of the sender and receiver MAC-hs when the MAC is reset. Consequently, Chang's disclosure would not lead a skilled person to implement a MAC reset as defined by claim 15.

Claim 15 further distinguishes over Sarkkinen and Chang in that the MAC reset procedure, with partial priority queue flushing in the base station, is initiated while receiving a MAC PDU with predefined inbound identification and a reset identification (RID) field comprising a logical channel identification.

The Office Action proposes that this subject matter is disclosed by Chang in Fig. 15 and paragraphs [0081, 0082]. However, the Applicants note that Chang's MAC PDU, illustrated in Fig. 15, does not initiate a MAC reset procedure with partial priority queue flush in the base station; instead, Chang's MAC PDU is transmitted between the sender MAC-hs and the receiver MAC-hs (see Chang paragraph [0082]), that is, between a Node B and a mobile unit so as to

initiate the MAC reset in the mobile unit, not in the base station as required by the subject-matter of claim 15.

According to Chang, the MAC-hs in the base station is reset by transmitting, when the sender RLC is reset, reset indication information to the sender MAC-hs (Node B) through a primitive or a control frame (see Chang paragraph [0085]). Chang discloses the control frame format in Fig. 10 and paragraphs [0070-0072], and a variant thereof is disclosed in Fig. 11 and described in paragraphs [0073-0074].

As apparent from Chang's disclosure, Chang's messages are different from the Applicants' claimed MAC PDU with predefined inband identification and an RID field, which comprises logical channel identification. Therefore, Chang fails to disclose the instant claimed subject matter of initiating a MAC reset procedure in a base station, when receiving a MAC PDU with predefined inband identification and a reset identification field comprising logical channel identification.

Furthermore, Chang's MAC PDU, illustrated in Fig. 15, is different from the MAC PDU defined by the Applicants' claim 15, in that Chang's C/T field distinguishes logical channels and an additional signal indication field indicates MAC reset information (see Chang paragraphs [0081] and [0083]). By contrast, the Applicants' claimed MAC PDU, reset indication, and the logical channel identification are comprised in one field, which is the claimed reset identification field.

Accordingly, the Applicants respectfully submit that the teachings of Sarkkinen and Chang, considered individually or in combination, do not render obvious the subject matter

defined by claim 15. Therefore, allowance of claim 15 and all claims dependent therefrom is deemed to be warranted.

In view of the above, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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